Understanding & Leading the Human Cognitive Network of Net-Centric Warfare

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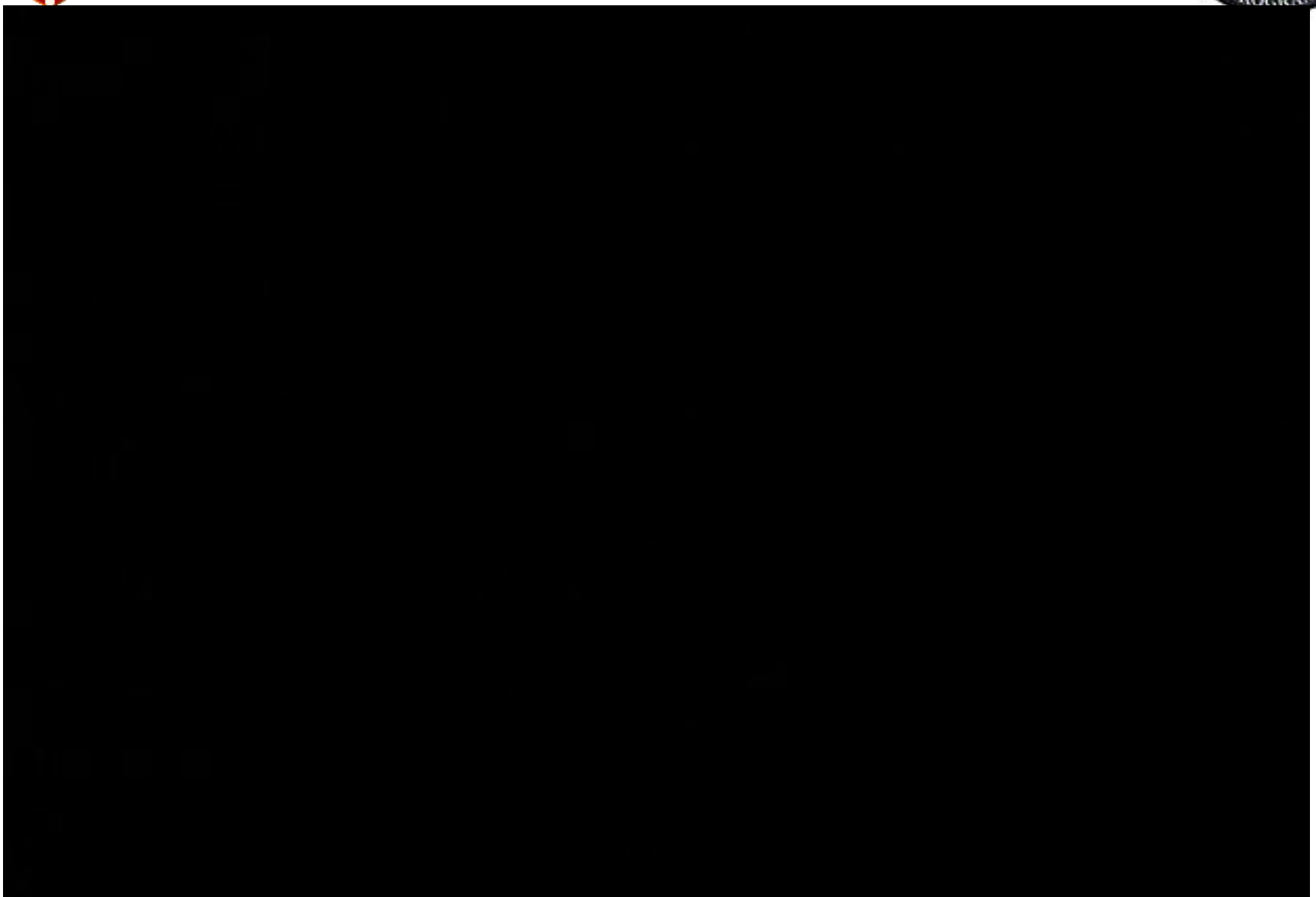
Agenda

- The Future as Technology Sees It
- A Human-Centric Critique
- Findings from Laboratory Experimentation & Field Observation
- Future Directions

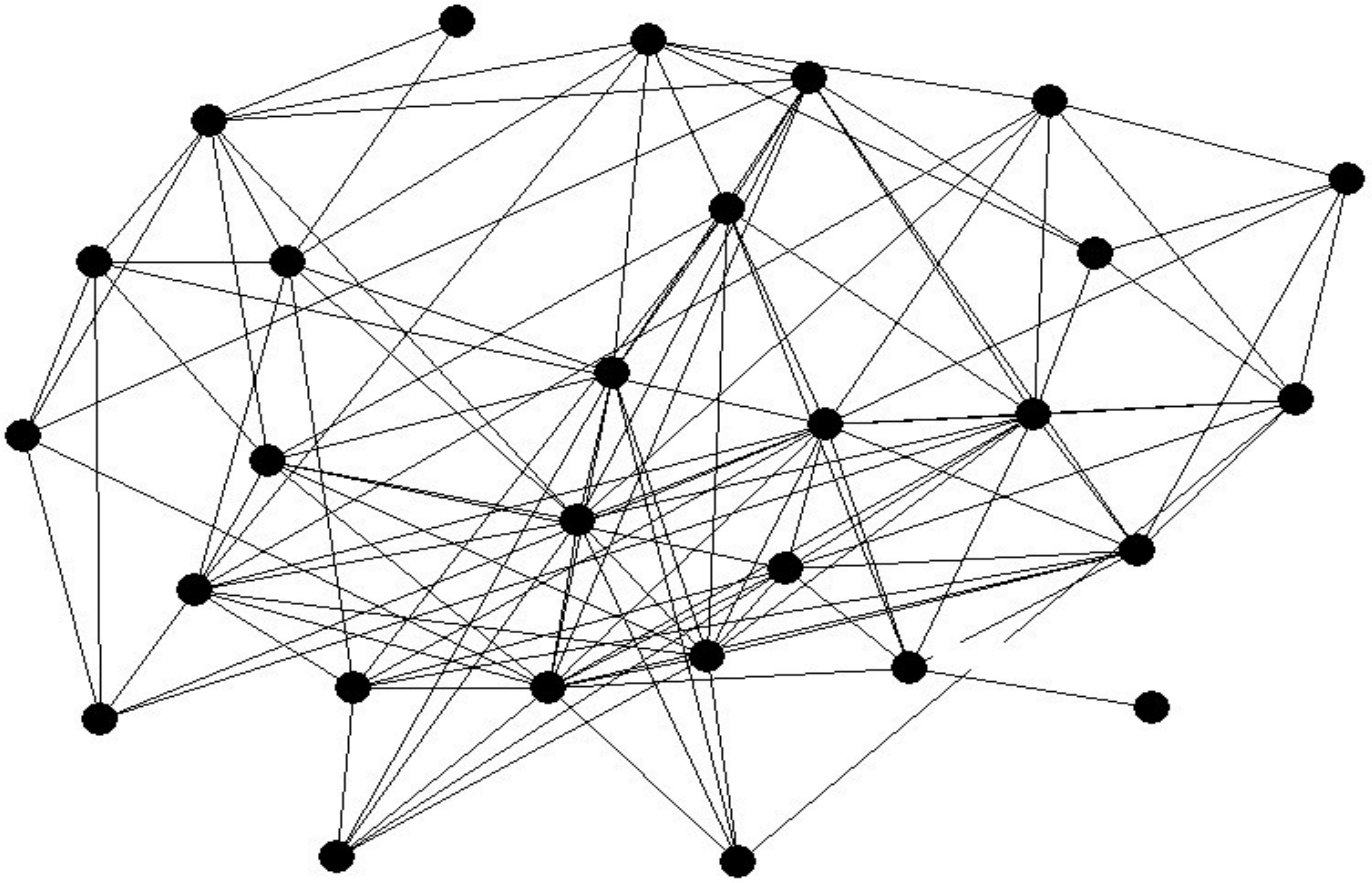
Future Combat System; A Net-Centric Initiative



What the technologist see:

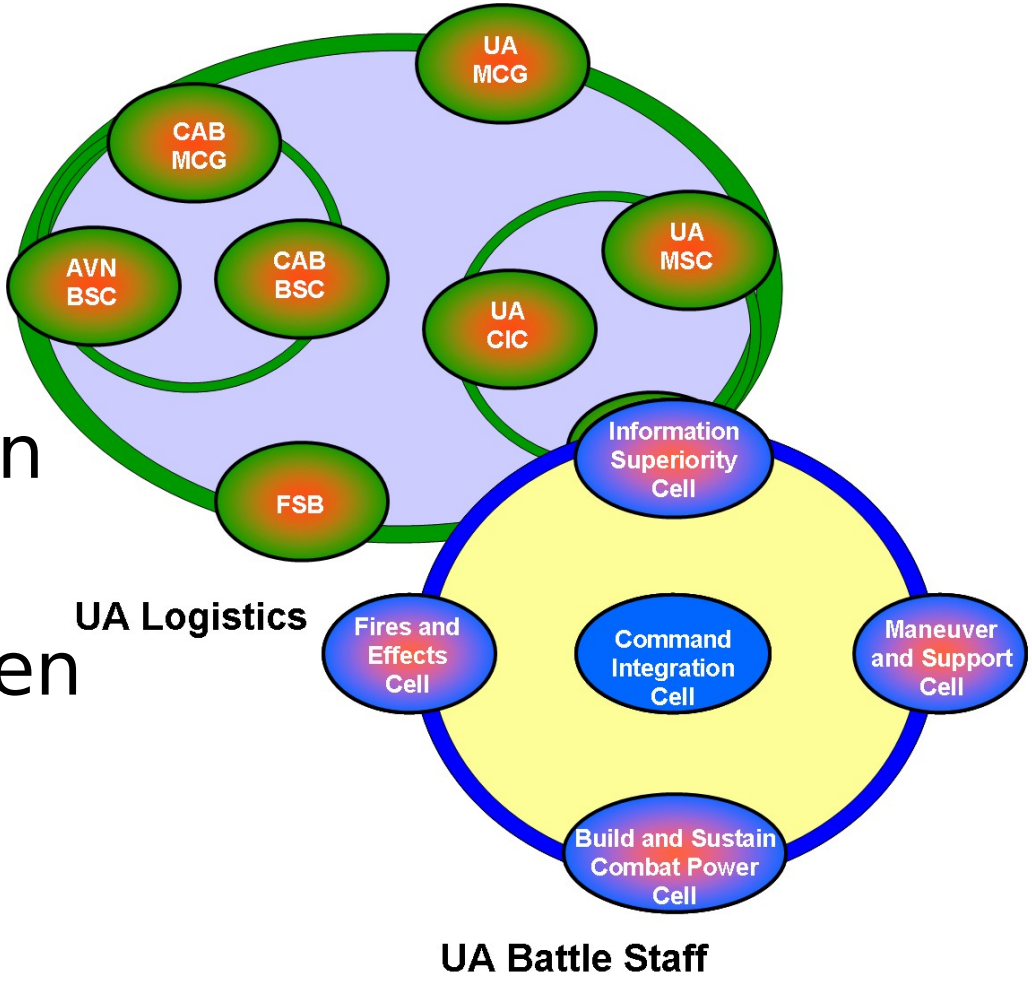
- Perfect Knowledge of Blue
- Rapid Updating of Red
- Seamless Integration
- Just in Time Information
- Commander-Centric Battle Command

What I See

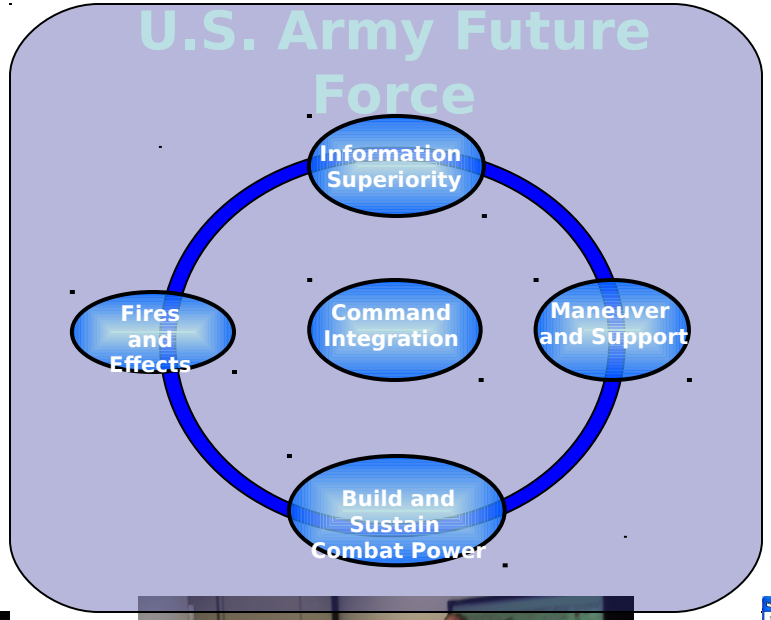


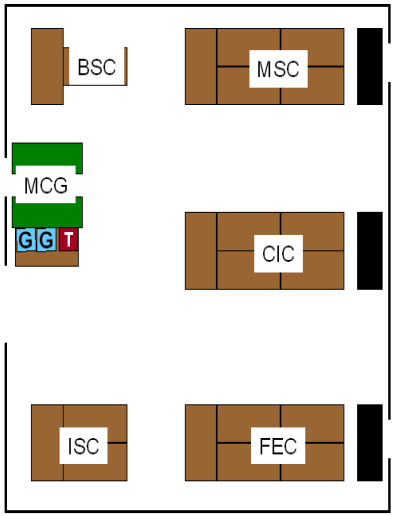
Unit of Action Network-Centric Experimentation

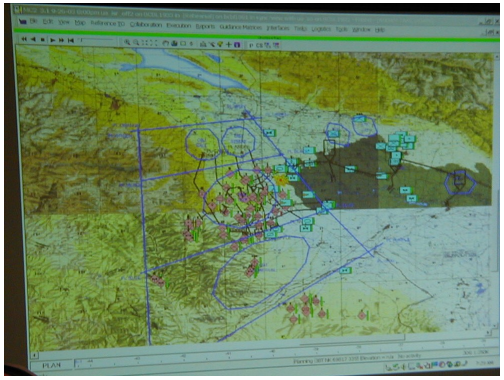
- Network Organization
- Nodal Structure
- Problem & Goal Driven

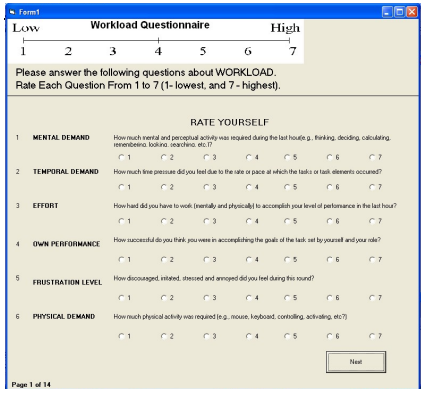


Experimental Approach

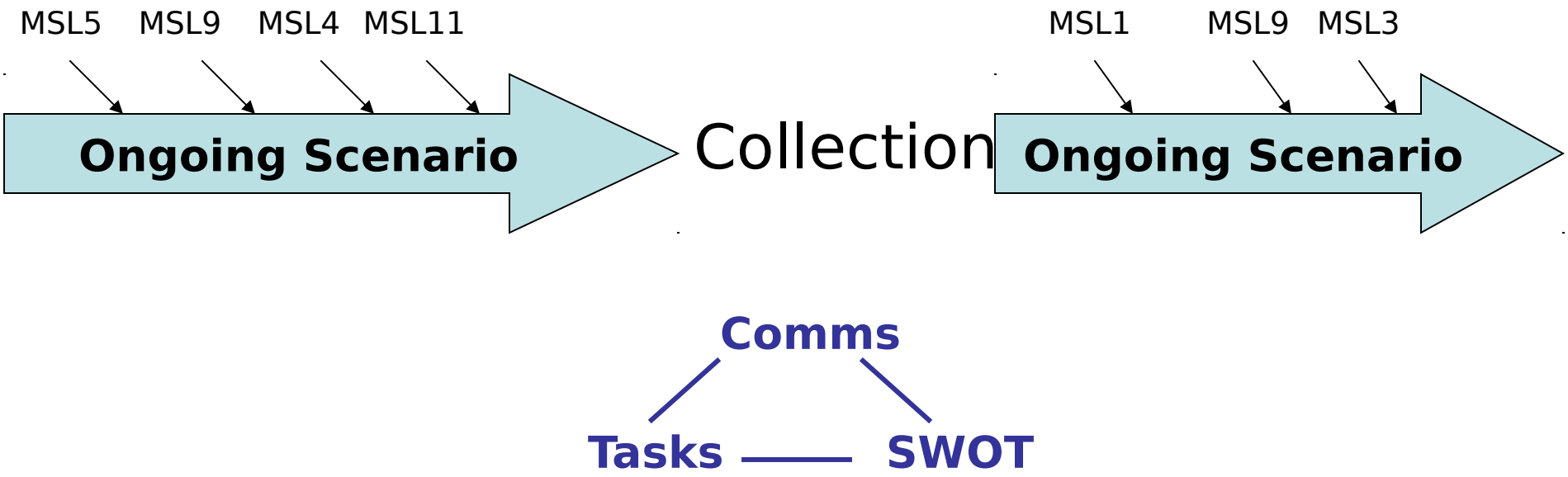








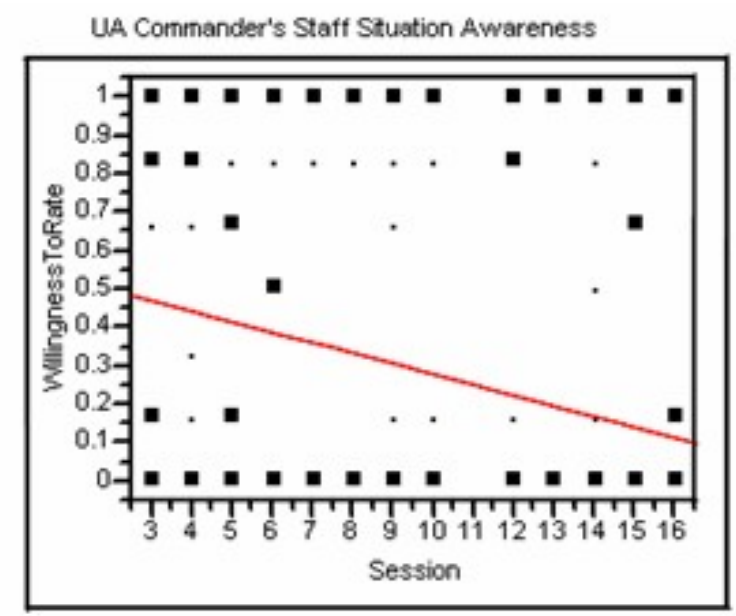
Experimental Method



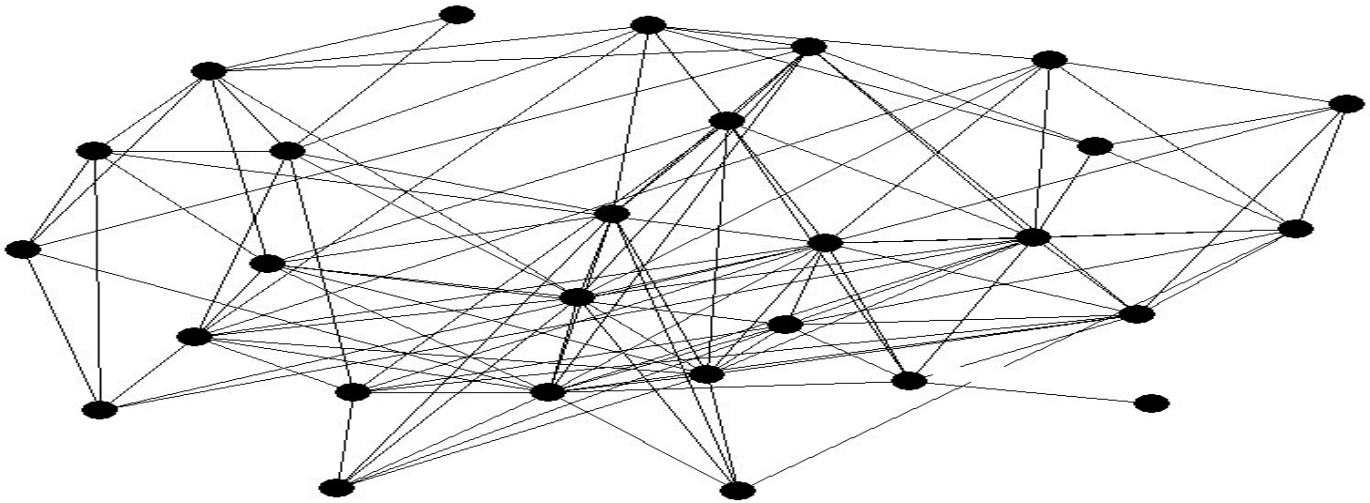
Initial Findings

- Network-Centric Can be VERY Fast
- Network-Centric is Not Commander Centric
- Ad-Hoc Team Formation overrides traditional structure
- Decision-Processes are morphed by proactive performers

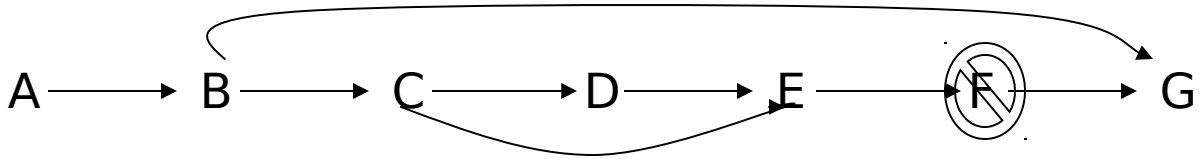
Network-Centric is not Commander-Centric



"Enabling Operations at the *Edge of Chaos*"



Process

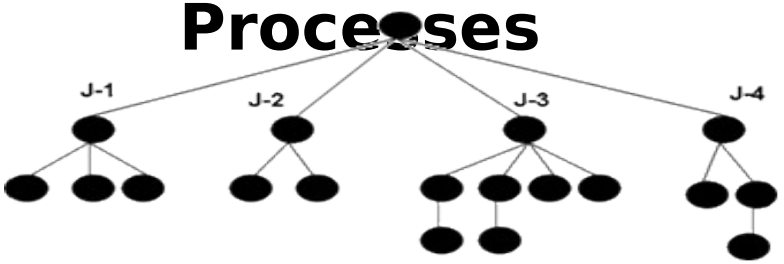


"Edge of Chaos"

Leader/Manager Reaction

Impose Structure and Linear Decision-Making Processes

A

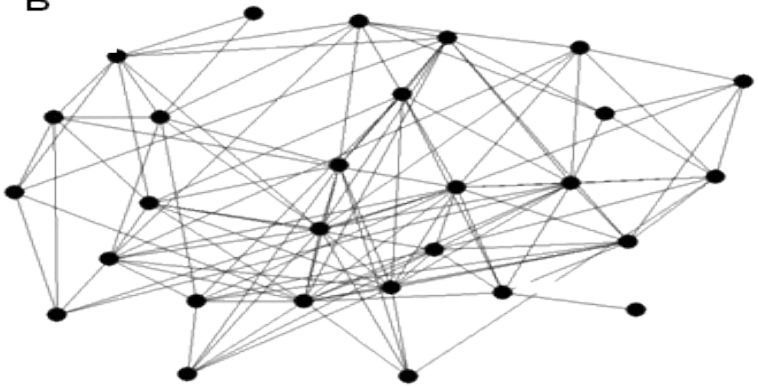


- Maintain Staff Situation Awareness
- Apply Legacy Knowledge
- Control OPTEMPO
- Manage Tasks
- Evoke Mental Models/Scripts/ Templates

- Slow
- Deliberate
- Time Driven (1/3-2/3)
- Task-load the up the hierarchy
- Staff Expertise Downtime

Let it Ride!

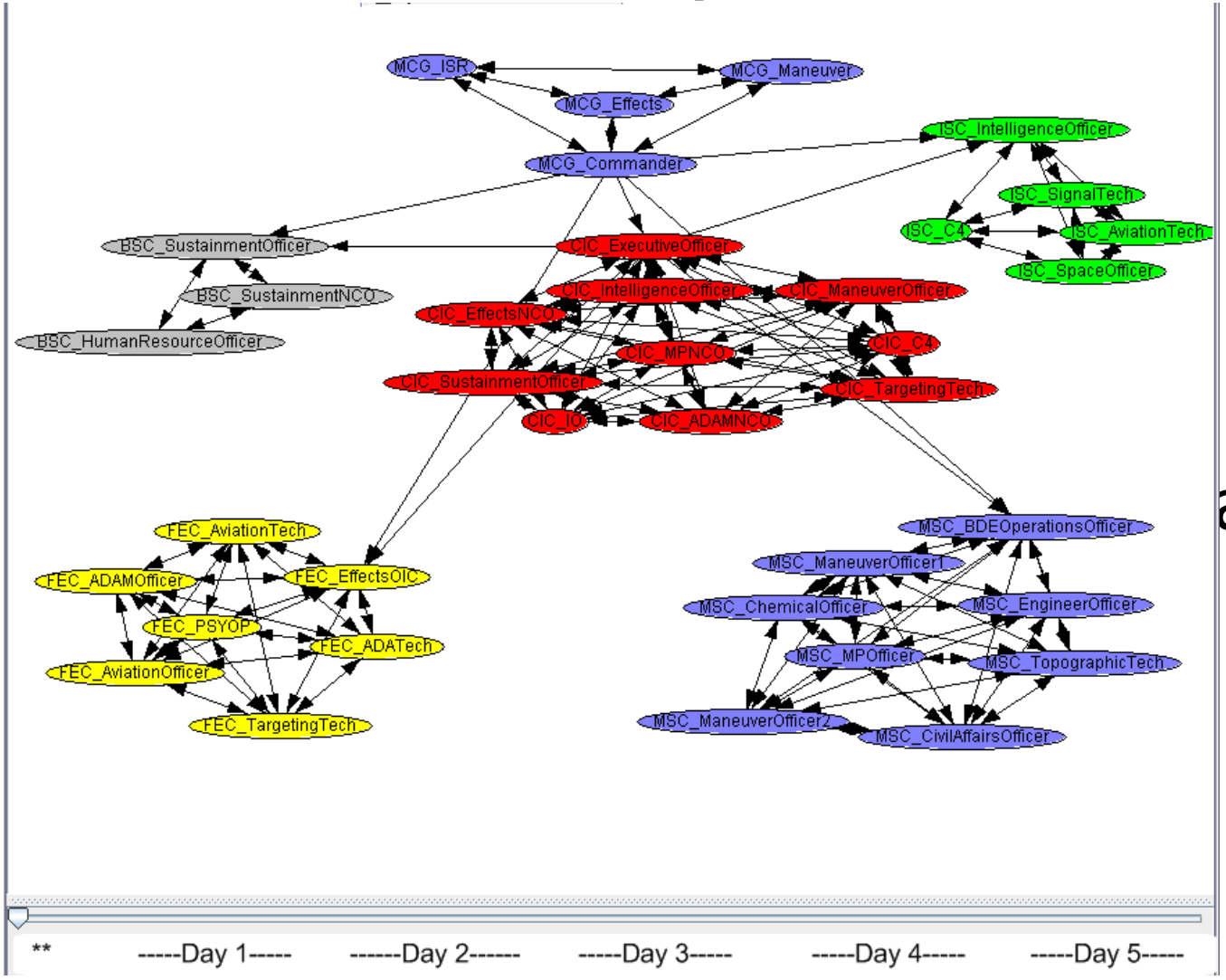
B



- Fast…really fast
- Task-driven
- Expertise Driven
- Initiative is rewarded

- Process?
- Deconfliction (FF)?
- Expertise overload?
- Organizational Pulse?
- Metrics?

Network Dynamics



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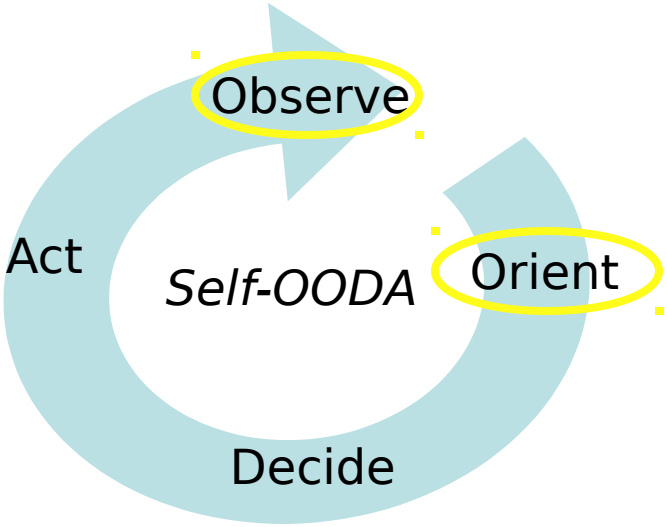
Network Situation Awareness

S → R

Feedback



"I used to pursue situation awareness of the opposing forces, now I need situation awareness about myself"

Experimental UA Commander

Network Field Observations

- Sleep patterns in network-centric operations
- Commander & Staff roles & workload
- Ad-hoc Team Formation & Monitoring
- Diagnosis vs. Fault Detection
- Individual, Shared & Team Situation Understanding

Thank You!

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